

KUZNETSOV, S.I., insh.; YAMPOL'SKIY, A.L., insh.

The utilization of coal and peat for power purposes. Torf. prom. 35 no.7:
25-28 '58. (MIRA 11:11)

1. Gosudarstvennyy institut po proyektirovaniyu zavedov torfyanoy pro-
myshlennosti.
(Peat) (Coal)

KUZNETSOV, S. I.

Boring

New cable-percussion drill UKS-30 Gor. zhur. No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1952, ~~1952~~, Uncl.

KUZNETSOV, S.I., inzhener.

BNP-15 boring machine for drainage of coal overburden sand.
Shakht.stroi. no.6:22 Je '57. (MIRA 10:7)
(Boring machinery) (Mine drainage)

KUZNETSOV, S.I.
TSEBRO, M.Ya., inzh.: KUZNETSOV, S.I., inzh.

Improving the system of repumping feedwater as a method of
combatting corrosion in locomotive boilers. Vest. TSNII MPS
17 no.8:51-53 D '58. (MIRA 12:1)
(Locomotive boilers)

Handwritten signature: S.I. Kuznetsov

KUZNETSOV, S.I.; DIANOVA, Ye.V.; DOLGOV, G.I.

Aleksandr Semenovich Razumov (1894-1960); an obituary.
Trudy Gidrobiol. ob-va 12:417-419 '62. (MIRA 15:12)
(Razumov, Aleksandr Semenovich, 1894-1960)

KUZNETSOV, S.I.; ROMANENKO, V.I.

Oxidation-reduction potential of the surface layers of silt deposits
in various types of lakes. Dokl. AN SSSR 151 no.3:679-682 J1
'63. (MIRA 16:9)

1. Institut biologii vodokhranilishch AN SSSR. 2. Chlen-korrespondent
AN SSSR (for Kuznetsov).
(Oxidation-reduction reaction) (Silt)

KUZNETSOV, S.I.; ROMANENKO, V.I.; GLAZUNOV, V.I.

Production of organic matter at the expense of the photosynthesis
of phytoplankton in Lake Baikal. Dokl. AN SSSR 156 no.6:1444-
1447 Je 164. (MIRA 17:8)

1. Institut biologii vnutrennikh vod AN SSSR i Limnologicheskiy
institut Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent
AN SSSR (for Kuznetsov).

STARIKOV, Vasilii Ivanovich; KUZNETSOV, S.I., nauchn. red.

[Fire safety for cultural and educational institutions]
Pozharnaiia bezopasnost' kul'turno-prosvetitel'nykh uch-
rezhdenii. Moskva, Stroizdat, 1965. 97 p.
(MIRA 18:3)

DEREVYANKIN, V.A.; NOVOZHENOV, V.M.; IL'YASHEVICH, Ye.M.; KUZNETSOV, S.I.

Effect of washing on the settling rate of red mud in alumina
production. TSvet. met. 38 no.9:55 S '65.

(MIRA 18:12)

KUZNETSOV, S. I., G. I. Pral, and G. B. Armand

"Automobile ZIS-151," a Soviet Army training manual prepared by automobile administration of the Ministry of War, USSR, Moscow, 1951.

ARMAND, G.B., inzhener; KUZNETSOV, S.I., inzhener; POCHTAREV, N.F., inzhener-polkovnik, redaktor; ZORIN, V.G., tekhnicheskii redaktor.

[ZIS-151 truck] Avtomobil' ZIS-151. Moskva, Voen. izd Ministerstva
oborony SSSR, 1955. 246 p. (MIRA 8:4)
(Motor trucks)

KUZNETSOV, SERGEY IVANOVICH

N/5
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Regulirovka Konicheskikh Podshipnikov i Zubchatykh Zatsepleny Avtomobiley
(Adjustment of Conical Bearings and Gears of Automobiles) Moskva, Voenizdat, 1956.

117 p. illus., diags.

KUZNETSOV, S.

Efficient method of engine heating. Avt.transp. 34 no.9:29 S '56.
(MLRA 9:11)

1. Glavnyy inshener avtobazy izdatel'stva "Pravda".
(Automobiles--Engines)

84-11-20/36

KUZNETSOV, S.

AUTHOR: Kuznetsov, S., Engineer

TITLE: New Means of Mechanization (Novyye sredstva mekhanizatsii)

PERIODICAL: Grazhdanskaya aviatsiya, 1957, Nr 11, p.21 (USSR)

ABSTRACT: The State Scientific Research Institute of Civil Aviation has designed and built models of two types of special trucks for loading and unloading aircraft. The APK-1 lifting truck, designed by B.M. Ivanov, Engineer, has the capacity of 3 tons and 2.5 m lift. It has been designed to service the Il-12, Il-14, Il-18 and An-10 aircraft. The AK-2 is a conveyor-equipped truck designed by B.N. Astashov, Engineer. The conveyor is mounted on the GAZ-51 truck. It is driven by the truck engine through a special gearbox. The conveyor speed is regulated by engine revolutions and can be changed within the range from .8 to 1.2 m/sec. The AK-2 is designed for handling mail, baggage, and light cargo up to 50 kg.

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New Means of Mechanization (Cont.)

84-11-20/36

Both machines have a special lighting system to facilitate their night use. A photograph shows the APK-1 in operation, two other photographs show the use of the AK-2 at the Il-12 and the Tu-104 aircraft. A diagram explains the working of the hydraulic system of the APK-1.

AVAILABLE: Library of Congress

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ARMAND, G.B.; VYAZ'MIN, V.A.; GRINSHTEYN, L.M.; GOL'DBERG, G.I.; GOLUBEV, B.S.; KASHLAKOV, M.V.; KRASNOPEVTSEV, M.P.; KUZNETSOV, S.I.; KURAYEV, A.V.; KAYUKOV, G.I.; MASHATIN, V.I.; MOLOTOLOV, V.I.; NERUSH, A.R.; PRAL', G.I.; RAGUSKAYA, L.F.; RUBINSHTEYN, S.M.; SEMENKOV, P.L.; TARASOV, L.A.; FEDOROVA, A.A.; TSEPKIN, M.F.; SHAYEVICH, A.G.; ZARUBIN, A.G., otv.red.; VASIL'YEVA, I.A., red. izd-va; SOKOLOVA, T.F., tekhn.red.

[ZIL-157 motortruck; operation and service] Avtomobil' ZIL-157; instruktsiia po ekspluatatsii. Gos.nauchno-tekhn.izd-vo mashinostroitel'nykh mashin, 1958. 235 p. (MIRA 11:12)

1. Moskovskiy avtomobil'nyy zavod.
(Motortrucks)

KUZNETSOV, S., inzh.; ZUMAREV, A., inzh.

Small winch of the ZIL-157 automobile. Avt.transp. 37 no.4;
38-40 Ap '59. (Winches) (MIRA 12:6)

KUZNETSOV, Sergey Ivanovich; ZUBAREV, Aleksey Afanas'yevich; KURAYEV,
Aleksandr Vasil'yevich; PANFILOV, Vladimir Trofimovich;
KOSOROTOV, B.V., inzh.-polkovnik zapasa, red.; SOKOLOVA, G.F.,
tekhn. red.

[ZIL motortruck] Gruzovye avtomobili ZIL. Moskva, Voenizdat,
1962. 495 p. (MIRA 15:6)

(Motortrucks)

KUZNETSOV, S., inzh.

Power-take-off box for the ZIL-157K motortruck engine. Avt.transp.
40 no.4:43-44 Ap '62. (MIRA 15:4)

1. Avtozavod im. Likhacheva.
(Motortrucks--Transmission devices)

KUZNETSOV, S. I.

Subject : USSR/Aeronautics - bibliography AID P - 5479
Card 1/1 Pub. 135 - 25/29
Authors : Burago, G. F., Eng.-Col. Dr. of tech. sci., and S. I. Kuznetsov, Eng.-Major, Cand. of tech. sci.
Title : Aerodynamics of the aircraft wing
Periodical : Vest. vozd. flota, 2, 88-89, F 1957
Abstract : Critical review of the book "Aerodynamics of the Aircraft Wing" (Aerodinamika Kryla Samoleta) by E. Karafoil, published by the Academy of Sciences of the USSR, Moskva, 1956, 479 pages.
Institution : None
Submitted : No date

BURGESS, Eric; KUZNETSOV, S.I. [translator]; ZAKS, N.A. [translator];
TIMROT, D.L., red.

[Frontier to space] K granitsam prostranstva. [Translated from
the English] Perevod s angliiskogo S.I.Kuznetsova i N.A.Zaksa.
Pod red. D.L.Timrota. Moskva, Izd-ve inostrannoi lit-ry, 1957.
221 p. (MIRA 12:3)
(Atmosphere, Upper--Rocket observation)

KUZNETSOV, S.I.

KRASNOV, Nikolay Fedorovich; ARZHANIKOV, N.S., prof., retsenzent; SHUMYATSKIY, B.Ia., kand. tekhn. nauk, retsenzent; KUZNETSOV, S.I., kand. tekhn. nauk, retsenzent; KRASIL'NIKOV, S.D., inzh., red.; TUBYANSKAYA, F.G., izd-va red.; FUKHLIKOVA, N.A., tekhn. red.

[Aerodynamics of rotating bodies] Aerodinamika tel vrashchenia.
Moskva, Gos. izd-vo obr. promyshl., 1958. 560 p. (MIRA 11:10)
(Aerodynamics)

KUZNETSOV, S. I.

PHASE I BOOK EXPLOITATION SOV/5855

Kibardin, Yu. A., S. I. Kuznetsov, A. N. Lyubimov, and B. Ya Shumyatskiy

Atlas gazodinamicheskikh funktsiy pri bol'shikh skorostyakh i vysokikh temperaturakh vozdušnogo potoka (Atlas of Gas Dynamic Functions for High Air-Flow Speed and High Temperature) Moscow, Gosenergoizdat, 1961. 327 p. Errata slip inserted. 6000 copies printed.

Ed. (Title page): A. S. Predvoditelev, Corresponding Member, Academy of Sciences USSR; Ed.: A. S. Meleyev; Tech. Ed.: N. I. Borunov.

PURPOSE : This atlas is intended for design bureaus and scientific research organizations concerned with the design of gas turbines and rocket engines and also with problems associated with combustion processes and the utilization of atomic energy. It may also be useful to students in beginning and advanced courses in schools of higher technical

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Atlas of Gas Dynamic (Cont.)

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education.

COVERAGE: The manual presents necessary material for the solution of basic gasdynamic problems for airflow while taking into consideration variable specific heat, dissociation, and partial ionization. This material encompasses a pressure range from 10^{-6} to 10^8 kg/cm² for temperatures up to 20,000°K. In addition, the book presents in detail the gasdynamic functions of an ideal gas ($\kappa = 1.4$) which facilitate the determination of flow parameters for isentropic flow, shock waves, and flow around circular cones. Part I contains diagrams of the state and kinetic coefficients of the dissociating air. Part II presents graphs and diagrams which contain the calculation results of isentropic flows and shock waves while taking into account the variable specific heat of the air. Part III gives the gasdynamic functions of an ideal gas ($\kappa = 1.4$) in the presence of oblique shock waves and for axial flow around circular cones which permit the determination of flow parameters at the cone surface as well as the velocity-, pressure-, and

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Atlas of Gas Dynamic (Cont.)

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mass-flow fields for axial flow around circular cones with vertex half angles of $5 - 50^\circ$. Determinations of parameter values with an accuracy sufficient for the solution of most practical problems may be made with the aid of included diagrams. The appendixes present detailed tables of gasdynamic functions for an ideal gas at $\kappa = 1.4$ and M numbers from 0 to 100, and also tables of approximating polynomials of conical flows which aid in determining velocity fields and individual mass flows with an accuracy up to the fifth decimal. The latter tables may be used for investigating more general problems of gasdynamics with the aid of electronic digital computers. The authors thank Professor G. F. Burago, Doctor of Technical Sciences, M. Ye. Kozhenkova, S. S. Nalbandyan, K. M. Samoshkina, and L. N. Turkina. There are 11 references: 8 Soviet (including 1 translation) and 3 English.

TABLE OF CONTENTS:

Preface

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Card 3/8

KUZNETSOV, S. I.

Rabbits

Influence of feeding on selectivity in impregnation. Kar. 1 zver., 5, No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1952, Uncl.

KUZNETSOV, S. I.

Kuznetsov, S. I.

"The effect of the various acid-base relationships in fodder regions on the growth and development of swine." "in Higher Education USSR. Moscow Veterinary Academy. Moscow, 1956 (Dissertation for the degree of Candidate in Biological Sciences)

Knizhnaya letopis'
No. 25, 1956. Moscow

USSR/Farm Animals. Rabbits.

Q-3

Abs Jour: Ref Zhur - Biol., No. 22, 1958, 101223

Author : Kuznetsov, S.I.

Inst : ~~All-Union Scientific Research Institute of~~
Feeding of Farm Animals.

Title : Effects of Alkaline and Acid Food Rations Upon
Physiological Sperma Indicators in Male
Producers.

Orig Pub: Tr. Vses. n.-i. in-ta kormleniya s.-kh.
zhivotnykh, 1956, 3, 429-431

Abstract: During 15 months, rabbits of the Champagne and
Chinchilla breeds were kept on different rations.
One group received physiologically acidic (pre-
dominantly containing kernel parts of plants)
rations and the other group was given physio-

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KUZNETSOW, ~~KL~~ S. I. Cand Biol Sci -- (diss) "~~The~~ ^{upon} Effect of
Various Acid-Alkali Ratios in Feed Rations ~~on~~ the Growth and
Development of Hogs." Mos, 1957. 19 pp 21 cm. (Min of
Agriculture USSR, Mos Veterinary Academy), 140 copies (KL, 25-57, IIII)

- 3⁶ -

DEREVYANKIN, V.A., kand. tekhn. nauk; KUZNETSOV, S.I., prof., doktor
tekhn. nauk; SHABALINA, O.K., inzh.

Effect of titanium and silicon oxide admixtures on the leaching
rate of aluminum hydroxides. Sbor. nauch. trud. Ural. politekh.
inst. no.122:102-110 '61. (MIRA 17:12)

TIKHONOV, V.N.; KUZNETSOV, S.I.

Effect of alternating current on the stability of aluminate
solutions. Zhur.prikl.khim. 38 no.11:2448-2451 N '65.
(MIRA 18:12)

1. Ural'skiy politekhnicheskii institut imeni S.M.Kirova.
Submitted July 27, 1964.

TSIENOV, V.N.; IUGNETSOV, S.I.

Effect of ultrasonic vibrations on the decomposition rate of
aluminate solutions. Tsvet. met. 58 no.4:52-56 Sp 161. (MIRA 18:5)

KOROTKOV, V.M.; KUZNETSOV, S.I.; DERBYANKIN, V.A.

Effect of irradiation of the rate of leaching of bauxite and
hydroargillite. Zhur. prikl. khim. 38 no.4:746-750 Ap '65.
(MIRA 18:6)

1. Ural'skiy politekhnicheskii institut imeni Kirova.

KUZNETSOV, S. I., LUK'YANOV, P. S.

Volga-Don Canal

New life of Il'yevka. Nauk i zhizn' 19 no. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1952, UNCL.

KUZNETSOV, S., inzh.

~~Hydraulic rams. Pozh.dele 4 no.9:19-20 '58.~~
(Hydraulic rams)

(MIRA 11:9)

KUZNETSOV, S.K.

AUTHOR: Kuznetsov, S.K., Engineer

98-58-6-10/21

TITLE: On the Conjunction of Upper and Lower Heads in a Suddenly-Widened Waterway (O sopryazhenii b'yefov pri vnezapnom rasshirenii rusla)

PERIODICAL: Gidrotekhnicheskoye Stroitel'stvo, 1958, Nr 6, pp 34-37 (USSR)

ABSTRACT: Two basic forms of current conjunction are possible in the lower head when the channel is suddenly widened: the free spilling of water on a plane and a deflecting flow. The free spilling on a plane is possible only when the flow of spilling-current is in the central part of the lower head. The author presents graphic and analytic calculations to determine the depth-limit at which free-spilling is still possible, and to derive an equation for water-jumps in the deflecting flow.
There are 2 graphs and 7 Soviet references.

AVAILABLE: Library of Congress

Card 1/1 1. River currents-Mathematical analysis

KUZNETSOV, S.K., Cand Tech Sci -- (diss) "Conjunction of
the ~~upper and lower waters~~ ^{civil works} in a sudden ~~widening~~ ^{widening} of the
river channel." Kiev, 1959, 15 pp; 4 sheets of diagrams
(Min of Higher Education UkrSSR. Kiev Inst of Engineers
of Water Resources) 150 copies (KL, 33-59, 118)

- 28 -

KUZNETSOV, S.K., inzh.

Free spreading out of the stream in projection in the
tailwater of hydraulic installations. Izv. vys. ucheb. zav.;
energ. 2 no.10:103-107 0 '59. (MIRA 13:3)

1. Novocherkassiy inzhenerno-meliorativnyy institut. Predstavlena
kafedroy gidravliki.
(Hydraulics)

KUZNETSOV, S.L.

"Petroleum microbiology; an introduction to microbiological petroleum engineering." E.Beerstecher. Reviewed by S.I.Kuznetsov. Mikrobiologiya 24 no.3:382-384 My-Je '55. (MIRA 8:7)

(BEERSTECHEER, E.)

(PETROLEUM--BACTERIOLOGY)

KUZNETSOV, S. M., KASHERININOV, R. M.

Development of production techniques of motion-picture equipment
at the "Lenkinap" Factory. Tekh.kino i telev. 4 no.5:56-61 My
'60. (MIRA 13:8)
(Leningrad--Motion pictures--Equipment and supplies)

KUZNETSOV S.M.

VONSYATSKIY, A.T., inzh.; ROYZMAN, I.B., inzh.; KUZNETSOV, S.M., inzh.

Transportation and assemblage of 34.2m reinforced concrete span
members. Transp.stroi. ll no.3:21-22 Mr '61. (MIRA 14:3)
(Bridge construction)

TRAKHTMAN, I.M.; IOFFE, A.B.; CHERNYI, N.I.; FUZNETSOV, S.M.; SOLOV'YEV, N.
P.; DOROGUSH, G.I.; KAPUSTIN, L.D.; VINBERG, B.G.; RUBCHINSKIY, Z.
M.; PETHO, G.A.; ZAGORDAN, N.M.; BRAVIN, V.F.

Multiple-unit rail car with regenerative braking. Prom. energ. 15
no.11:18-19 N '60. (MIRA 14:9)
(Railroad motorcars) (Electric railway motors)

KUZNETSOV, S.M.; SERGEYEV, O.A.

Thermal phenomena caused by polishing plane parallel plates.

Opt.-mekh.prom. 25 no.1:48-51 Ja '58.

(MIRA 11:7)

(Grinding and polishing)

KUZNETSOV, S.M.; SHEVEL'KOVA, L.I.

Effect of deformations in grinding and polishing tools on the
precision of surface configurations of machined optical parts.
Opt.-mekh.prom. 25 no.6:33-37 Je '58. (MIRA 11:10)
(Grinding and polishing)

LUK'YANENKO, V.I.; FIEROV, B.A.; KUZNETSOV, S.M.

Role of the higher sections of the central nervous system in inhibiting the local allergic reaction the Arthus-Sakharov phenomenon. Vest. Mosk. un. Ser. 6: Biol., pochv. 17 no. 2: 24-28 Mr-Apr '62. (MIRA 17:2)

1. Kafedra fiziologii vysshey nervnoy deyatel'nosti Moskovskogo universiteta.

SOKOLOV, S.D., kand. tekhn. nauk; KUZNETSOV, S.M., inzh.;
KACHEVSKIY, A.I., inzh.

Experience in the operation of quick-action electric network
protection. Trudy TSNII MPS no.276:16-32 '64. (MIRA 17:8)

AUTHOR: Kuznetsov, S. M. (Moscow) SOV/103-19-11-6/10

TITLE: Probability of Damaging of the Elements of a System of Automatic Control (Veroyatnost' povrezhdeniya elementov sistem avtomaticheskogo regulirovaniya)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 11, pp 1048-1061 (USSR)

ABSTRACT: The following is shown as a result of an investigation carried out: The probability of the element being damaged is determined by the law of the distribution of disturbances of the element $\varphi_0(T)$. If the effect produced by the element is characterized by several independent parameters, the disturbance distribution law will, according to formula (22), be a "composition" of the individual disturbance distribution laws of the individual parameters $\varphi_1(T)$ of the element. The form of the general distribution law is in this case determined by the relative position and form of the individual laws, i. e. by the function $\varphi_1(T)$, which is approximately represented by the formulae (14) and (16). - A formula is given for the dependence of the general disturbance distribution on the standardized individual distributions in a general form for the experimental evaluation

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Probability of Damaging of the Elements of a
System of Automatic Control

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of the reliability of elements. At a given tolerance for the variation of element parameters the form of individual distribution laws depends on the probability components of the resulting deviation of each of the parameters (formulae (10) and (11)). The probability characteristics of the components of the resulting deviation of each of the element parameters in turn depend on the probability characteristics of the disturbance factors and are determined according to formulae (8) and (9). If the individual laws of the disturbance distribution of the element (for each of its parameters) were obtained in consideration of the probability characteristics of the disturbance factors, formula (22) shows a unique dependence of the general disturbance distribution law of the element on its parameters and on the probability characteristics of the disturbance factors. Formula (22) makes it possible analytically to calculate the general disturbance distribution law for various production- and operation conditions in the element. The limits of permissible deviation of the disturbance factors are in this case determined by the condition of conservation

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Probability of Damaging of the Elements of a
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linear relation between the variation of the components of the
resulting parameter deviation of the element and variation of
disturbance factors. There are 10 figures and 14 Soviet
references.

SUBMITTED: May 30, 1957

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KUZNETSOV, S.M.

p3

9(2)

PHASE I BOOK EXPLOITATION

SOV/1722

Nadezhnost' radioelektronnoy apparatury; sbornik statey (Reliability of Electronic Equipment; Collection of Articles) Moscow, Izd-vo "Sovetskoye radio," 1958. 144 p. Number of copies printed not given.

Compiler: I.V. Grushin; Ed.: V.G. Masharova; Tech. Ed.: A.A. Sveshnikov.

PURPOSE: The book may be useful to engineering personnel working with electronic equipment.

COVERAGE: The authors discuss the necessity of determining the reliability of component elements of various electronic systems and describe methods of calculating the probability of faults in trigger circuits, amplifiers, rectifiers, and other vacuum-tube devices. No personalities are mentioned. References appear at the end of all but one article.

TABLE OF CONTENTS:

Zimin, V.A. Reliability of Operation of Standard Elements of the High-speed Electronic Computer (BESM)
The author explains methods of checking computer operation and discusses

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Reliability of Electronic (Cont.)

SOV/1722

the reliability of operation of such standard elements as trigger circuits, pulse-forming circuits, pulse rectifiers, phase inverters, cathode followers, diodes, and amplifiers with pulse delay. There are 3 references, all Soviet.

Zimin, V.A. Life of Vacuum Tubes in
Electronic Computer (BESM).

Elements of the High-speed Elec-

27

The author discusses the results of studying the reliability of computer vacuum tubes at the USSR Academy of Sciences in 1952-1954. He also explains the stability of tube parameters, operating conditions, and tube life. There are 2 references, both Soviet.

Sinitza, M.A. Problems of Using Stand-by Radio Electronic Equipment

40

The author describes methods of reserving and connecting stand-by equipment, and presents a mathematical analysis of probabilities of faults and discusses the effectiveness of using stand-by equipment. There are 5 references, 3 of which are Soviet [including 2 translations], and 2 English.

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Reliability of Electronic (Cont.)

Levitin, S.M. Underheating and Noise Parameters as Indices of Gradual Impairment of Tube Characteristics 75
The author studies static tube characteristics under conditions of underheating and explains the effect of noise on operation and life of vacuum tubes. A discussion of a system for testing vacuum tubes is also presented. There are 4 references, all Soviet.

Kuznetsov, S.M. Criterion and Method of Evaluating Reliability of Components of Radio Electronic Systems 92
The author presents a mathematical analysis of the reliability criterion and describes methods of evaluating the reliability of electronic system components. He also discusses the disadvantages of such a method. There are 17 references, all Soviet [including 2 translations].

Druzhinin, G.V. Methods of Calculating System Reliability 116
The author explains analytical and graphical methods of calculating reliability of electronic system components. There are 5 references, 3 of which are Soviet, and 2 English.

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Reliability of Electronic (Cont.)

SOV/1722

Babenko, A.A. Reliability Parameters of Electronic Equipment

131

The author discusses the probability of the occurrence of faults in electronic equipment and explains the necessity of determining the reliability of various components. There are no references.

AVAILABLE: Library of Congress (TK780.N3)

JJ/lsh
7-6-59

Card 4/4

KUZNETSOV, S.M. (Moskva)

Damage probabilities for elements of automatic control systems
[with summary in English]. Avtom. i telem. 19 no.11:1048-1061
N '58. (MIRA 11:11)
(Automatic control) (Probabilities)

KUZNETSOV, S.M.

The 5312M gear-milling machine. Biul.tekh.-ekon.inform.
no.8:35-36 '61.

(MIRA 14:8)

(Gear-cutting machines)

KUZNETSOV, S.M.

Hydraulic motor for the worm conveyer of a gear milling machine.
Mashinostroitel' no.12:19 D '61. (MIRA 14:12)
(Oil-hydraulic machinery)

24843

S/103/61/022/008/012/015
D274/D302

13.2941

AUTHOR: Kuznetsov, S.M. (Moscow)

TITLE: Reliability estimate of automatic system based on testing only a part of the system's components

PERIODICAL: Avtomatika i telemekhanika, v. 22. no. 8, 1961, 1108-1116

TEXT: In systems with many complex units, these are tested separately; some of the more complex units are not tested at all. As a large number of units of the same type is involved (which operate under the same conditions), a statistical reliability-estimate is suggested. The estimate is based on the following method. For a system consisting of k distinct groups of elements of same type which are characterized by approximately same fault-probability, the total fault-probability P_c of the system is

$$P_c \approx \sum_{i=1}^k P_{2i} \quad (2)$$

where P_{2i} is the fault-probability of a group of elements of same type
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D274/D302

Reliability estimate...

type; this formula is obtained by assuming $P_{2i} \ll 1$ and by neglecting second-order quantities. The relationship between P_{2i} and the fault-probability P_e of its elements is

$$P_{2i} \approx \sum_{j=1}^{M_i} P_e \quad (3)$$

where M_i is the number of elements of a group. The standard deviation is

$$\sigma_c = \sqrt{\sum_{i=1}^k M_i \sigma_e^2} \quad (3b)$$

where σ_e is the standard deviation of the elements. The elements are divided into groups according to the feasibility of testing them. Then P_c is

$$P_c \approx P_{K1} + P_{K2} + P_{K3} \approx \sum_{i=1}^L P_{ii} + \sum_{j=1}^R P_{nj} + \sum_{l=1}^S P_{cl} \quad (4)$$

where P_{ii} is the fault probability with respect to each group of elements of same type which belong to units which are tested; P_{nj} is the probability with respect to elements of the same type as

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Reliability estimate...

24843

S/103/61/022/008/012/015
D274/D302

the previous category, but which do not belong to units which are tested; P_{c1} is the probability with respect to the remaining groups of elements which do not belong to tested units and are of different type than the tested elements; L is the number of the various groups of the first category, R of the second, and S of the third. Further, the possibility is ascertained of determining the terms of Eq. (4) by testing of the system. The L -term can be found directly by testing

$$P_{ii} \sum_{L} \sum_{M_i} P_{ei} \quad (6)$$

The standard deviation is

$$\sigma_{K1} = \sqrt{\sum_{L} \sigma_{fi}^2} = \sqrt{\sum_{L} M \sigma_{ei}^2} \quad (7a)$$

Hence σ_{ki} depends also on the structure of the system (the number of similar elements M_i and the number of groups L). The R -term of formula (4) can be found indirectly, by extending the results of testing the first category to the second. This can be done by assuming elements of same type in both categories. The formulae for P_{k2} and σ_{k2} are

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$$P_{k2} \approx \sum_{j=1}^R \sum_{i=1}^{M_i} P_{ej} \quad (9a)$$

$$\sigma_{k2} = \sqrt{\sum_{j=1}^R \sigma_{nj}^2} = \sqrt{\sum_{j=1}^R M_{2j} \sigma_e^2} \quad (11)$$

The S-term of formula (4) cannot be estimated by testing of the system, as the elements of the third group do not belong to units which are tested and are of a different type from the elements of the first two groups. The S-term can be determined only by preliminary testing of the elements themselves. The formulae for P_{k3} and σ_{k3} are analogous to those of the first two groups. Introducing the obtained relationships in formula (4), one obtains

$$P_c \approx \sum_{i=1}^L M_i P_{ei} + \sum_{j=1}^R M_j P_{ej} + \sum_{l=1}^S M_l P_{el}$$

where M_e is the number of elements of same type in the various groups of each category. The standard deviation is (if the system has maximum homogeneity)

Card 4/6

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D274/D302

Reliability estimate...

$$\sigma_c = \sqrt{M_1 \sigma_e^2 + M_2 \sigma_e^2} = \sqrt{M_0 \sigma_e^2}$$

where M_0 is the total number of (similar) elements of the system, M_1 and M_2 are the number of elements in the tested and untested units, respectively. It is noted that, irrespective of the degree of homogeneity of the system, the foregoing method gives a more accurate estimate than the usual method. The experimental error in the reliability estimate can be determined by formula

$$\gamma_c = \sqrt{\left\{ \sqrt{\left[\sum^L \sqrt{M_i \gamma_{ei}^2} \right]^2} \right\}^2 + \left\{ \sqrt{\left[\sum^R \sqrt{M_j \gamma_{ej}^2} \right]^2} \right\}^2 + \left\{ \sqrt{\left[\sum^S \sqrt{M_k \gamma_{ek}^2} \right]^2} \right\}^2} \quad (17)$$

where γ_e is the error in the mathematical expectation of the reliability of elements. It is noted that the error tends to zero with increasing number M_i of elements of same type. (This is based on the law of large numbers). Hence the effectiveness of the method is enhanced with the greater homogeneity of the system. There are

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D274/D302

Reliability estimate...

1 figure and 3 Soviet-bloc references.

SUBMITTED: November 21, 1960

+

Card 6/6

KUZNETSOV, S.M.

Automatic mechanism for setting and clamping billets on a gear-milling machine. Stan.i instr. 32 no.7:9-10 JI '61. (MIRA 14:6)
(Gear-cutting machines--Technological innovations)

KUZNETSOV, S. M.

Cutting forces in grinding gear wheels with a conic wheel by the
method of burnishing. Stan. i instr. 35 no.5:33-34 My '64.
(MIRA 17:7)

KHUMI, S.M.

Determining the cutting force in grinding peers with an abrasive
form. Stan. 1 instr. 35 no.11:26-28 N 16%. (MIRA 18:3)

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6,
p 85 (USSR) 14-57-6-12310

AUTHOR: Kuznetsov, S. M.

TITLE: Errors in Computing Reservoir Capacity From Topographical Maps (Ob oshibkakh v podschete ob'yemov vodokhranilishch po topograficheskim kartam)

PERIODICAL: Sb. statey po geodezii, 1955, Nr 9, pp 55-65

ABSTRACT: The author examines the methods used in computations. The amount of the error depends on how exactly the maps depict the relief. The author gives formulas and graphs for computing probable errors made in determining reservoir areas and capacities. With their help he was able to establish that anticipated errors made when using the maps to the scale of 1:50 000 with a contour interval of 10 m. to compute the capacity of a reservoir in one section of the Volga river about 150 km long exceeded by six to

Card 1/2

Errors in Computing Reservoir Capacity (Cont.)

14-57-6-12310

seven times anticipated errors made by using the maps to the scale of 1:25 000 with a contour interval of 2 m. In conclusion, he points out that in computing capacities of lowland river reservoirs with a volume up to ten billion cu m, a map in scale of 1:50 000 with a contour interval of 10 m can only be recommended for preliminary work in which an error of 10 to 15 percent can be tolerated; when the volume is up to three billion cu m, such a map cannot be recommended at all, since the errors can exceed 25 percent. When computing capacities greater than 500 million cu m, maps to the scale of 1:25 000 with a contour interval of 2 m must be used. If this is done, errors in determining capacity will not exceed 1 to 3 percent. In the case of reservoirs with capacities 500 million cu m, maps to the scale of 1:10 000 with a contour interval of 1 m or 2 m must be used.

Card 2/2

S. I. Shch.

KUZNETSOV, Sergey Mikhaylovich; CHASTUKHIN, S.A., inzh.-geodezist, retsen-
zent; KLIMOV, O.D., kand.tekhn.nauk, retsenzent; MURAV'YEV, M.S.,
dotsent, retsenzent; LEVCHUK, G.P., dotsent, kand.tekhn.nauk,
retsenzent; LEBEDEV, N.N., dotsent, retsenzent; GLOTOV, G.F., dotsent,
retsenzent; GRIGOR'YEV, V.M., inzh.-geodezist, retsenzent; PIMENOV,
A.F., inzh.-geodezist, retsenzent; BELIKOV, Ye.F., dotsent, red.;
KHROMCHENKO, F.I., red.izd-va; ROMANOVA, V.V., tekhn.red.

[Geodetic operations in the design and construction of hydraulic
structures] Geodezicheskie raboty pri proektirovanii i stroitel'stve
gidrotekhnicheskikh sooruzhenii. Moskva, Izd-vo geod.lit-ry, 1960.
173 p.

(Hydraulic engineering)

(Surveying)

(MIRA 13:9)

KUZNETSOV, S.M.

Changes in the technical scheme for tracing linear structures and
computation of earthwork quantities. Geod.i kart. no.5:42-51 My
'61. (MIRA 14:6)
(Surveying) (Earthwork—Tables, calculations, etc.)

^{NI}
KUZNETSOV, S., kandidat tekhnicheskikh nauk; KULAKOVSKIY, A., inzhener

Precast reinforced concrete granaries for districts in which virgin
and idle lands are being cultivated. Muk.-elev.prom. 21 no.5:9-12 My '55.
(MIRA 8:9)

1. Gosudarstvennyy institut Promsternoprojekt
(Granaries) (Precast concrete construction)

KUZNETSOV, S. ¹¹ kandidat tekhnicheskikh nauk.

Planning grain drying and cleaning towers. Muk.-elev. prom. 22
no.8:5-9 Ag '56. (MLRA 10:8)
(Grain handling machinery)

KUZNETSOV, S.M., kand.tekhn.nauk; EPSHTEYN, B.V., kand.tekhn.nauk;
KULAKOVSKIY, A.B., inzh.; KUROCHKIN, A.M., inzh.

Precast reinforced concrete granaries. Bet.i zhel.-bet.
no.8:337-345 Ag '61. (MIRA 14:8)
(Granaries) (Precast concrete construction)

L 21116-65 EEC-4/ENG(v)/EWA(h)/EWT(1)/EEC(t)/FS(v)-3/EEC(m)/FCC/FSF(h)/FSS-2
 Pe-5/Pg-4/Pi-4/Pj-4/Po-4/Pq-4/Pae-2/Peb/Pb-4 AEDC(b)/BSD/AFHL/SSD/ASD(a)-5/
 AEDC(a)/AFMD(c)/AFETR/AFTC(a)/AFTC(b)/AFQC(f)/ESD(mi) TT/GW/WS
 ACCSSION NR: AP5002106 S/0048/64/028/012/2058/2074

AUTHOR: Vernov, S. N.; Chudakov, A. Ya; Yakulov, P. V.; Gorchakov, Ye. V.; Ignat'yev, P. P.; Kuznetsov, S. N.; Logachev, Yu. I. Lyubimov, G. P.; Nikolayev, A. G.; Okhlobkov, V. P.; Sosnovets, E. N.; Tarnovskaya, M. V.

TITLE: Radiation study by Cosmos 17 [Report presented at the Vsesoyuznoye soveshchaniye po fizike kosmicheskikh luchey (All-Union Conference on the Physics of Cosmic Rays), held at Moscow, 4-10 October 1963]

SOURCE: AN SSSR. Investiya. Seriya fizicheskaya, v. 28, no. 12, 1964, 2058-2074

TOPIC TAGS: radiation measurement, spaceborne ionization measurement, primary cosmic radiation, scintillation counter, gas discharge counter, STS-5 gas discharge counter, Cosmos-17

ABSTRACT: The article describes equipment used in the flight of Cosmos-17 (apogee, 788 km; perigee, 260 km) for investigating the Earth's radiation belts and primary cosmic radiation. The equipment consisted of two scintillation counters (with NaI and CsI crystals) and

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ACCESSION NR: AP5002106

a STS-3 gas-discharge counter. The cylindrical NaI counter (20 X 20 mm) was mounted under the shell of the satellite and was fitted with aluminum shielding (1 g/cm²). On one channel it recorded ionization produced in the crystal by radiation; on the two others, it registered the number of pulses with energy release in the crystal over the specified thresholds (50 kev and Mav). The effective cross section of the NaI crystal for particles registered along the ionization and first threshold channels was approx. 4.7 cm²; for the second channel, it was roughly 5% smaller for particles with quadruple ionization and 20% smaller for relativistic particles.

The STS-3 gas-discharge counter has an effective cross section of 4.3 cm². It was placed inside the device containing the scintillation counter and was not fitted with any special protection. Up to counting rates of 3×10^3 pulses/sec, the counter registered virtually all particles. At higher rates, the count became less reliable.

The flat CsI counter (crystal diameter, 6 mm; thickness, 3 mm) was mounted outside the container. For protection from light, the crystal was covered with aluminum foil (2 mg/cm²). For protection against

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ACCESSION NR: AP5002106

bremsstrahlung, the photomultiplier and the crystal were shielded with 5 mm of lead and 11 mm of aluminum, except for the front of the photomultiplier, which had a conical opening for particle incidence (aperture angle, 40°). This counter carried out ionization measurements and particle registration at energy release in the crystal of 45 and 160 kev and 5.4 and 8.5 Mev. Both electrons and protons could be registered along the first two (45 and 160 Kev) channels. Along the other two (5.4 and 8.5 Mev) channels, the count was mainly of protons; at an electron path perpendicular to the crystal surface energy losses were about 2 Mev and oblique-paths were precluded by the thickness of the shielding. Table 1 of the Enclosure gives the minimal particle energies registered by the counters. Orig.: art. has: 32 tables and 4 formulas.

ASSOCIATION: none

Card 3/5

L 1551-66 ENT(1)/FCC/EWA(h) GW/GS

ACCESSION NR: AT5023613

UR/0000/65/000/000/0420/0425

AUTHOR: Kuznetsov, S. N.^{44.55}; Sosnovets, E. N.^{44.55}; Stolpovskiy, V. G.^{44.55}

TITLE: Time variations of the earth's outer radiation belt

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva^{44.55} Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 420-425

TOPIC TAGS: cosmic ray, cosmic radiation, earth radiation belt, Elektron 1, Elektron 2^{12, 44.55}

ABSTRACT: Data from Elektron-1 and -2 for the period 30 January to 23 February 1964 were used in a study of variations of the outer radiation belt on the night side of the earth. Particular attention was given to the intensity of counts in the maximum of the belt and to variations of the position and boundaries of the maximum. McIlwain coordinates, calculated in the dipole approximation, were used. Graphs of the variations in time of the Kp and K indexes (for the College and Murmansk stations respectively), showed, in general, a decrease in the frequency of the Geiger counter during periods of increased magnetic activity, although occasionally the frequency increased with intense magnetic activity (e.g., on 6 February at

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L 1551-66

ACCESSION NR: AT5023613

12:00 UT). The sudden onset of a magnetic storm can be accompanied by a drop in the count frequency, sometimes by as much as one order of magnitude. The non-monotonic drop in count frequency during the storm of 12-13 February 1964 was explained by the decrease in magnetic disturbance after a sudden beginning and the main phase. After the initial drop, however, a twofold increase in the count frequency was generally observed during a 24-hr period (confirmed also during the storm of 31 January and 20 February 1964). The position of the radiation maximum changed little during magnetic disturbances. However, on 12-13 and 20 February, its L parameter decreased by ≈ 3.8 to 4. The boundaries of the belt were affected by the magnetic field changes to a greater degree, and shifts to lesser L at higher as well as lower altitudes were in general agreement with Forbush, Pizzella, and Venkatesan (Geophys. Res., 67, N10, 1962, 3651). Contradictory observations were explained by irregular electron fluxes outside the belt's boundary. The shift of the boundary toward smaller L was attributed to an "outpouring" of electrons near the boundary not only during magnetic storms, as observed by Machlum and O'Brien (J. Geophys. Res., 68, N4, 1963, 997), but also under stationary conditions. The intake and output of electrons by the belt can occur within a period of 3 hours. The general conclusion is that the outer radiation belt is highly sensitive to magnetic conditions. The gap between the inner and outer belts appears to be the

Card 2/3

L 1551-66

ACCESSION NR: AT5023613

area in the magnetosphere in which the trapped particles behave in various fashions.
Data are presented to support this assumption. Orig. art. has: 4 figures. [FP]

ASSOCIATION: none

SUBMITTED: 02Sep65

NO REF SOV: 002

ENCL: 00

OTHER: 010

SUB CODE: AA, SV

ATD PRESS: 4094

Card 3/3

L 3281-66 FSS-2/EWT(1)/FS(v)-3/FCC/EWA(d)/EWA(h) T¹/GS/GW
ACCESSION NR: AT5023614 UR/0000/65/000/000/0425/0433

AUTHOR: Vernov, S. N.; Chudakov, A. Ye.; Vakulov, P. V.; Kuznetsov, S. N.;
Logachev, Yu. I.; Sosnovata, E. N.; Stolpovskiy, V. G. 42
871

TITLE: Irregular flows of high energy electrons close to the boundary of the
earth's radiation belts

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow,
1965. Issledovaniya kosmicheskogo prostranstva (Space research); Trudy konferentsii.
Moscow, Izd-vo Nauka, 1965, 425-433

TOPIC TAGS: geomagnetic field, satellite data analysis, radiation belt¹²

ABSTRACT: The authors analyze data obtained from "Elektron-1" and "Elektron-2" dur-
ing their first month of operation. The equipment used on the satellites is briefly
described. Analysis of data pertaining to the midnight meridian indicates that the
intensity of the electrons at the boundary of the outer belt decreases by two or
three orders of magnitude within a narrow range of radial distances. It is estab-
lished that the radiation belt on the night side of the earth terminates on quiet
days at $L = 6.5-7.5$. On the day side, the boundary of the belt extends on the

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L 3281-66

ACCESSION NR: AT5023614

average to $L = 9-10$. (Here L is the nominal McIlwain parameter calculated in the dipole approximation and expressed in earth radii.) It is found that irregular flows of electrons outside the boundary of the earth's radiation belts appear with an increase in perturbation of the geomagnetic field both at the surface of the earth and at distances of ~30,000 km from the earth. A theoretical explanation is given for this phenomenon. The experimental data support the hypothesis of a closed system of lines of force in the earth's magnetic field up to latitudes of 75° .
Orig. art. has: 9 figures and 1 table. [14]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: ES,SV

NO REF SOV: 002

OTHER: 010

ATD PRESS: 4105

Card 2/2

KUZNETSOV S.N., inzh.; TURKINA, N.A., inzh.

Experience in the operation of automatic long-distance telephone communications. Vest. svyazi 21 no.3:27-28 Mr '61. (MIRA 14:6)

1. TSentral'naya mezhdugorodnaya telefonnaya stantsiya.
(Telephone, Automatic)

KUZNETSOV, S.N.

Experience in the operation of long-distance automatic telephone systems. Vest. svyazi 24 no.11:16-19 N '64. (MIRA 18:2)

1. Nachal'nik mezhdugorodnoy telefonnoy stantsii No.1 Tsentral'noy mezhdugorodnoy telefonnoy stantsii SSSR.

KRISTAL'NIY, Vladimir Samoylovich; KITAYEV, V.Ye., retsenzent;
IVANNIKOVA, S.N., retsenzent; KUZNETSOV, S.N., otv. red.
CHRAZISOVA, Ye.A., red.

[Electrician of long-distance telephone exchanges] Monter
mezhdugorodnoi telefonnoi stantsii. Moskva, Sviaz', 307 p.
(MIRA 17:9)

KUZNETSOV, S.N.

Meeting of shock workers and collectives of communist labor of the
Moscow Central Telephone Exchange. Vest. sviazi 24 no.3:29
Mr '64. (MIRA 17:4)

RECEIVED, I.F.

Seventieth Anniversary of the Central Long-Distance Telephone
Exchange. Vest. Serial 25 n. 7126-29 of 185. (XMA 18:8)

CA 100-10000, 10000

2

Thermodynamic properties of gibbsite and boehmite.
 R. N. Kurajlov. *J. Applied Chem. U.S.S.R.* 23, 1205-8
 (1950) (Engl. translation).—The heats of formation of
 gibbsite and boehmite are 307.7 and 251.9 kcal., resp., at
 298.16°K. and the free energies of formation are 271.82
 and 217.10 kcal., resp., at 298.16°K. Equations for the
 heat capacities, heats of formation, and free energies of
 formation of gibbsite and boehmite were obtained as func-
 tions of the temp. The heat effect in the conversion of
 gibbsite into boehmite was calcd. to be 15.44 kcal. at
 298.16°K. Kenneth H. Sigale

... as reduction in power... ..

... elektricheskoye stantsii, no. 2, 1944, 14-15

... gas turbine engine, steam turbine, electric power plant, industrial
... industrial medicine

... ..

... ..

... ACTION: none

... ..

SKALOV, A.D., kand.tekhn.nauk; KUZNETSOV, S.N., inzh.

Experience in decreasing the noise of a large gas turbine system. Elek.
sta. 35 no.9:34-38 S '64. (MIRA 18:1)

MARKMAN, N.Ye.; KUZNETSOV, S.N.

Changes in the power unit design of a BS-1 boring machine. Gor,shur.
no.8:35 Ag '55. (MIRA 8:8)
(Boring machinery)

BURDOV, Aleksey Ivanovich; KUZNETSOV, Sergey Nikiforovich; SOROKIN, Nikolay Aleksandrovich; NAZAROV, P.P., redaktor; YEZDAKOVA, M.L., redaktor izdatel'stva; SHPAK, Ye.G., tekhnicheskiiy redaktor

["Uralets" BU-2 boring machinery; textbook for master workman schools and courses] Burovoi stanok "Uralets" BU-2; uchebnoe posobie dlia shkol i kursov masterov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po cherno i tsvetnoi metallurgii, 1956. 106 p. (MIRA 9:10)
(Boring machinery)

AC 2221 500, S. N.

127-12-19/28

AUTHORS: Shchulepnikova, A.G. and Kuznetsov, S.N., Engineers

TITLE: Increase of Durability of Mining Machinery Parts by Hardening them in the Oxygen-Acetylene Flame (Povysheniye iznosostoykosti detaley gornogo oborudovaniya zakalkoy kislorodno-atsetilenovym plamenem)

PERIODICAL: Gornyy Zhurnal, 1957, No 12, pp 65-66 (USSR)

ABSTRACT: The gas-flame surface hardening method has been in use in the Magnitogorsk Mining Machinery Plant since 1951. The introduction of this method made it possible to increase considerably the number of machine parts subjected to hardening. Acetylene is generated by a 10 m³/hour generator of the "TPK 10-48" type. Oxygen is supplied from gas cylinders. The microstructure of the hardened layer is martensite or troostite with martensite; its hardness is 50 to 60 Rc. The annealing of small-size parts can be performed in the annealing furnaces at 180 to 200° C. The hardness after hardening and annealing is 45 to 55 Rc.

Card 1/2

The article contains 2 figures and 1 table.

127-12-19/28

Increase of Durability of Mining Machinery Parts by Hardening them in the
Oxygen-Acetylene Flame

ASSOCIATION: Magnitogorsk Mining Machinery Plant (Magnitogorskiy zavod
gornorudnogo oborudovaniya)

AVAILABLE: Library of Congress

Card 2/2

KUZNETSOV, S.N.; YEMEL'YANOV, P.M.

The BM-150 and BM-150K automotive boring machines. Biul.tekh.-
ekon.inform. no.5:3-4 '59. (MIRA 12:8)
(Boring machinery)

ACC NR: AP6033831

SOURCE CODE: UR/0096/66/000/011/0070/0074

AUTHOR: Yudin, Ye. Ya. (Doctor of technical sciences; Professor); Kuznetsov, S. N.
(Dissertant; Engineer)

ORG: MISI im. V. V. Kuybysheva; NII Constructional Physics, Office of State Construction, SSSR (NII stroitel'noy fiziki Gosstroya SSSR)

TITLE: Investigation and calculation of the inlet noise in compressors and power gas turbine units

SOURCE: Teploenergetika, no. 11, 1966, 70-74

TOPIC TAGS: compressor, ^{aerodynamic} ~~compressor~~ noise, turbine engine.

ABSTRACT: A method is presented for determining the level and spectrum of noise in the inlet using data from aerodynamic calculations of a compressor's flow-through section. Orig. art. has: 6 figures, 10 formulas, and 1 table.

SUB CODE: 2D, 13/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 002

Card 1/1

SOURCE CODE: UR/0048/66/030/011/1827/1829

ACC NR: AP7000531

AUTHOR: Kuznetsov, S. N.

ORG: none

TITLE: The behavior of outer radiation belt according to data from Elektron-1 and Elektron-2 satellites / Paper presented at the All-Union Conference on Physics of Cosmic Rays held in Moscow from 15 to 20 November 1965

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 11, 1966, 1827-1829

TOPIC TAGS: radiation belt, satellite data analysis, meteorologic satellite, earth magnetic field, electron flux, gas discharge counter

ABSTRACT: The K_p index was used to study the interrelationship between the Earth's magnetic field and the variation of parameters associated with the outer radiation belt. The flux due to electrons with $40 \text{ kev} \approx E_e = 1.6 \text{ Mev}$ in the equatorial plane was studied as a function of the K_p index by using the Elektron-1 and Elektron-2 satellites. Indirect measurement of the electron flux was made by measuring the bremsstrahlung with gas discharge counters. Analysis of satellite data shows that in the outer radiation belt maximum during periods of relatively quiet magnetic activity the average magnetic flux ($E_e \approx 100$ to 250 kev) decreases with the increasing K_p . The average flux due to electrons with $E_e > 36 \text{ kev}$ does not vary when K_p increases. The

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APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R00092813000

ACC NR: AP7000531

boundary of the outer radiation belt was also studied as a function of K_p , and it was established that this boundary shifts to lower values of L when K_p increases. The variation of the outer radiation belt boundary as a function of magnetic disturbance H_{sd} is given in Fig. 1.

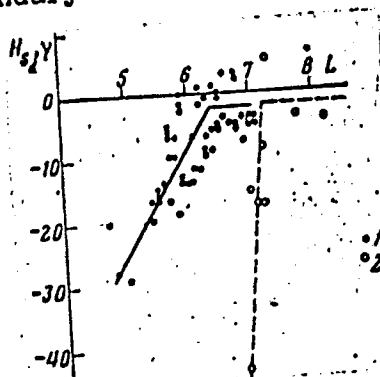


Fig. 1. Relationship between the outer radiation belt boundary and the magnetic disturbance H_{sd}

1 - Belt boundary according to Elektron-1 data; 2 - according to Elektron-2 data.

Comparison of variation of the belt boundary and the intensity of electrons with different energies in the radiation belt maximum shows that the most abrupt changes in these parameters are accompanied by anomalous

Card 2/3

ACC NR: AP700031

attenuation of cosmic noise in the auroral zones. Orig. art. has:
3 figures. [WA-75]
[BD]

SUB CODE: 0420/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 004

Card 3/3

L 1553-66 FSS-2/EWT(1)/FS(v)-3/FCC/EWA(d)/EWA(h) TT/OS/GW

ACCESSION NR: AT5023610

UR/0000/65/000/000/0394/0405

AUTHOR: Vernov, S. N.; Chudakov, A. Ye.; Vakulov, P. V.; Gorchakov, Ye. V.;
Kuznetsov, S. N.; Logachev, Yu. I.; Nikolayev, A. G.; Sosnovets, E. N.;
Rubinshteyn, I. A.; Stolpovskiy, V. G.; El'tekov, V. A.

TITLE: Geometric position and particle composition of the earth's radiation belts

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow,
1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii.
Moscow, Izd-vo Nauka, 1965, 394-405

TOPIC TAGS: cosmic radiation, earth radiation belt, cosmic ray, Elektron 1, Elektron 2

ABSTRACT: An exhaustive study is made of data recorded by the Elektron-1 and -2 satellites, which were launched on 30 January 1964. Orbital data are given in Table 1 of the Enclosure. The first orbits were positioned so that the satellites passed their apogee at about 3 o'clock a.m. local time. The outer boundary of the radiation belt was thus crossed at about midnight and again at about 7-8 p.m. on the return branch of the orbit. The subsequent orbits were shifted toward the sunset: Elektron-1, by 8 min, and Elektron-2, by about 4 min in the 24-hr period. Elek-

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ACCESSION NR: AT5023610

tron-1 and -2 were equipped with similar instrumentation. In some cases, however, there were differences in energy thresholds. A chart summarizing all data shows the electron and proton fluxes of different energies in the equatorial plane and for comparison gives IMP-1 data. The following conclusions can be made from the chart: 1) A belt of artificially injected electrons exists at distances closest to the Earth's center. The maximum of the belt in February 1964 was at $L = 1.35$. The flux of electrons with energy above 2 Mev at the maximum was about $1 \times 10^7 \text{ cm}^{-2} \cdot \text{sec}^{-1} \cdot \text{ster}^{-1}$. 2) The average directed flux of protons with an energy of 45-70 Mev at the maximum of the inner belt ($L = 1.45$) was about $1.5 \times 10^3 \text{ cm}^{-2} \cdot \text{sec}^{-1} \cdot \text{ster}^{-1}$. A change in the integral spectrum at proton energies above 50 Mev was observed at $L = 2.2$; the spectrum of these energies is in the process of hardening, which could be explained by the theory of albedo neutrons. 3) The spatial distribution of protons with an energy of one to several Mev differs from that of the electrons. There is a definite regularity in the distribution of protons according to their energies. The average directed flux of protons with an energy above 2 Mev was about $4.5 \times 10^5 \text{ cm}^{-2} \cdot \text{sec}^{-1} \cdot \text{ster}^{-1}$ in the equatorial plane at $L = 2.8$. It appears that the majority of the protons in this energy range are created by transverse drift with respect to the magnetic field lines. 4) A belt of high-energy electrons was observed at $L = 2.75$. Its width at the equator was about 0.4 earth radii. The average directed flux of electrons above 6 Mev was about $10^2 \text{ cm}^{-2} \cdot \text{sec}^{-1} \cdot \text{ster}^{-1}$. 5) A minimum of distribution

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of electrons of above 150 kev energy was observed in the region between $L = 3$ and $L = 4$. The altitude intensity shift is subject to large fluctuations in time and may drop at times to negligible magnitudes. 6) The maximum of the outer belt is positioned, on the average, at $L = 4.8$. The maximum altitude intensity shift indicator $m = 0.5 + 0.3/-0.2$ within a wide range of L . There is a sharp intensity jump on the night side at $L = 7 + 0.5$. On the morning side, a slow monotonic drop of intensity was observed. The average directed flux of electrons with an energy of over 70 kev at the maximum of the outer belt is about $5 \times 10^6 \text{ cm}^{-2} \cdot \text{sec}^{-1} \cdot \text{ster}^{-1}$ and can change by more than an order of magnitude. The electron energy spectrum observed within the 70 to 600 kev range is in agreement with the data of other researchers. The electron energy spectrum in the energy range above 1 Mev appears to be softening, in comparison with measurements of earlier years. Orig. art. has: 11 figures. [FP]

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TITLE: Behavior of the radiation belts¹² and anomalous absorption of cosmic radio
noise in the aurora borealis region during the magnetic storms of 12-14 February
and 20-21 February 1964

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TOPIC TAGS: cosmic noise measurement, radio wave absorption, aurora, magnetic
storm, radiation belt, magnetosphere

ABSTRACT: The authors make a direct comparison of electron fluxes with differing
energies in the outer radiation belt during various stages of geomagnetic disturb-
ances. The data used in this study were those transmitted by the Electron-1¹² and
Electron-2 satellites during the magnetic storms of 12-14 and 20-21 February 1964.
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